

Gas flow proportional counting (GFPC)

Radium-226/Radium-228 by GFPC methods EPA 903.0/904 or SW846 9315/9320 (traditionally):

Standard TAT = 20 Business days

Radium-226 and Radium-228 by GFPC is traditionally reported utilizing a 21 day "in-growth" to allow the other Radium alpha emitting isotopes (Radium-223 and Radium-224) to decay away and not bias the Radium 226 results.

Note: Turnaround time for Radium-226 by GFPC is 28 days due to the following constraints, 3-5 days prep; 21 days in-growth and 1-2 days to analyze and report.

Total Alpha Radium (TAR)/Radium by GFPC methods EPA 903.0/904 or SW846 9315/9320:

Standard TAT = 10 Business days

For projects, where TAT is a key factor, Radium-226 can be analyzed without in-growth or a shortened in-growth period by reporting Total Alpha Radium (TAR). Total Alpha Radium is the combined results of all alpha emitting isotopes for Radium, namely Radium-223, Radium-224 and Radium-226. However, the client must understand the assumptions in using this approach. If Radium-223 and/or Radium-224 are present in the sample, the Radium-226 result will be elevated. The GFPC instrument is not capable of discerning one Radium alpha emitting isotope from another. It is a single response. The longer the sample is allowed to decay (e.g. 7 days, 14 days, and 21 days) the less contribution from Radium-223 and/or Radium-224 there will be in the final Radium 226 result.

The client needs to evaluate the site history to determine if Radium-223 and Radium-224 contribution is a probable concern. Radium-223 and Radium-224 are not typically present or a concern for a site project. If the Radium-226 as Total Alpha Radium result is below the client's action level, then there is no further action. If the Radium-226 as Total Alpha Radium result, is above the client's action level, then the client needs to decide if they want to take remedial action using those high bias results or request Radium-226 be determined another way (i.e. Prepare a second aliquot for Ra226 with in-growth).